BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	

NOTICE OF INQUIRY AND NOTICE OF PROPOSED RULEMAKING

Comments of the Wyoming Public Service Commission

July 12, 2010

The Wyoming Public Service Commission (WyPSC) hereby submits initial comments in the above captioned matters. Our initial comments are submitted in the context of the very broad scope and large scale of the Federal Communications Commission's (FCC) "Broadband Action Agenda."[1] We are concerned that the Broadband Assessment Model is systemically biased against rural areas in Wyoming.

Considering the complexity of the policy and technical issues raised in this context by the Notice of Inquiry (NOI) and Notice of Proposed Rulemaking (NPRM), we offer our general comments as well as preliminary specific comments responding to the questions set forth in the NOI and NPRM. Our comments come from a basic agreement with the FCC that moving forward in promoting broadband adoption and deployment in unserved and underserved areas is vitally important. However, the FCC is missing some important details critical to success, particularly with regard to bridging the digital divide in the vast open spaces of Wyoming.

SUMMARY

The FCC proposes models and assumptions to identify gaps in the nation's broadband network and to quantify the amount of support needed to close those gaps at minimal expense. We believe that the FCC's model and assumptions cannot reliably identify broadband gaps or target support for rural areas in Wyoming. For rural areas characterized by sparse population, small population centers, and very large areas we recommend a more specific and relevant analysis involving local knowledge and closer partnership with states.

Platte County, Wyoming is referenced throughout these comments to illustrate our point. Platte County, Wyoming's population is described in the table below:[2]

Platte County, Wyoming

	2010 Forecast Population
Hartville	74
Glendo	225
Chugwater	231
Guernsey	1,107
Wheatland	3,437
# in Population Centers	5,074
Total County	8,530

Platte County covers 2,085 square miles, with 5,074 persons living in five population centers, and 3,456 persons living in rural areas of the county.[3] The county's rural population

[1] http://www.broadband.gov/plan/broadband-action-agenda.html visited July 9, 2010.

[2] http://eadiv.state.wy.us/pop/wyc&sc20.pdf

[3] http://plattecountywyoming.com/

density is approximately 1.7 persons per square mile. The FCC's analysis indicates that Platte County will not receive any broadband support and the FCC indicates plans to cap current support for basic universal service, eventually reducing all support for Platte County consumers to zero. The FCC approach will leave citizens in high-cost rural areas forever stranded in a broadband desert.

- The FCC must recognize the need for, and seek comment on, policies that include states as partners in this important effort. The FCC's Broadband Action Agenda, the NOI, and the NPRM lack appropriate recognition of the important role the states must fulfill. State's interests in consumer issues under the Connect America Fund (CAF) are the same as they are for the current regime that provides universal voice services.[4]

    - States must participate in the process of maintaining the integrity of the CAF; and
    - States have an important role with regard to the obligation to serve.
    - Consumers commonly call their state commissions first when they have problems with their communications services, and the FCC has endorsed the practice - urging states to fulfill this front line role.

- The timing of the Broadband Action Agenda is not conducive to the best possible outcome. There are numerous references to the need for better and more detailed data critical to a realistic assessment of the availability of broadband and to guide future funding.[5] The American Recovery and Reinvestment Act (ARRA) of 2009 made funding possible for broadband projects, including mapping of state broadband infrastructure. Funded by a $1.8 million grant from the National Telecommunications and Information Administration (NTIA) via the Broadband Data and Development Program (BDDP), states are currently engaged in preparing the data and the maps for submission to NTIA in September of this year.[6] Once that data and those maps become available, the FCC will have a much better basis for its CAF implementation efforts. Yet, the FCC is moving ahead and seeks our comments without it - or us - having the benefit of all of the data necessary for our thoughtful analysis and comment until after the comment period in the NOI and NPRM is closed. We strongly recommend that the FCC initiate a more productive process by incorporating the best data possible when it becomes available in the near future. Our comments here make a modest effort at addressing the limitations of

[4] Presentation to NECPUC by Peter Bluhm of Rolka, Loube, Saltzer, Associates, "Is Telecom Regulation Still Needed?" May 17, 2010.

[5] "Unfortunately, there is a lack of data at the required level of granularity, both in terms of availability—which people have access to what services—and of infrastructure—which people are passed by what types of network hardware." The Broadband Availability Gap, OBI Technical Paper No. 1, p. 1. "Through the model design and development process certain strengths and limitations emerged with respect to the approach (and the underlying available information)." Broadband Assessment Model (BAM) Documentation, CostQuest Associates, updated March 2010, p. 17.

[6] "the next update will be due on September 1, 2010 but should include data accurate as of both December 31, 2009 and June 30, 2010." DEPARTMENT OF COMMERCE National Telecommunications and Information Administration State Broadband Data and Development Grant Program RIN 0660-ZA29, Notice of Funds Availability and solicitation of applications. Footnote 26. "A beta version of Wyoming's interactive broadband maps will be available in early July 2010." http://www.linkwyoming.org/lwy/default.aspx visited July 9, 2010.

the FCC's data, but we strongly believe a better focus on the best available data is critical.

- We are concerned about the FCC's request for comment on "capping legacy high-cost support provided to incumbent telephone companies at 2010 levels, which would have the effect of creating an overall ceiling for the legacy high-cost program." Specifically, the fate of ongoing universal service funding in Wyoming is unclear in the context of the Broadband Action Agenda and the issues raised in the NOI and the NPRM. If the pending transaction between CenturyLink and Qwest is approved and the FCC carries forward with this capping concept, the effect on Wyoming could be negative and substantial.

- Unserved and underserved areas are going to be very hard to reach and will deserve very careful attention. Consider the following comment on the FCC's live blog concerning the Broadband Framework Notice of Inquiry (NOI) [7]

  Guest says:

  June 18 2010 at 11:50 AM

  We live in Jamestown, Colorado and the only so called high speed is Wild Blue satellite or Hughes Satellite. This is very slow compared to DSL. The telephone company here is Qwest and they have not put in DSL in our canyon. So if it ever does become available we would like to have it have the same rules that are enforced as the Radio Spectrum is. We need over-site [oversight] because a [at] the local level it doesn't exist. The State of Colorado (Our PUC) doesn't regulate it and we need to have it done on the National level. We need to tell Qwest that if they supply broadband they also have to provide it to the areas outside the big city's [cities]. We are 20 miles from Boulder and do not [have] high speed available. We have no cable available. [Editorial matter supplied.]

- The FCC estimates an 85% Investment Gap in Wyoming.[8] However, using the same FCC data, the Pew Center estimates that Wyoming is only at 68.2% of the stimulus standard, or 47th in the nation. [9]

- The following data, taken from the FCC's Web site, shows that the FCC incorrectly estimates six counties in Wyoming are 100% served with broadband at the national standard.[10]

[7] http://blog.broadband.gov/?entryId=509180

[8] http://www.broadband.gov/maps/availability.htm visited May 26, 2010, source for data table.

[9] "Bringing America Up to Speed, States' Role in Expanding Broadband," page 5, June 2010. The Pew Center on the States, http://www.pewcenteronthestates.org/report_detail.aspx?id=59149 visited June 25, 2010.

[10] http://www.broadband.gov/maps/availability.htm visited May 26, 2010, source for data table.

County	Percent Served	Proposed Ongoing Broadband Support	Unserved Housing Units
Albany	84%	$ 120	2,661
Big Horn	40%	$ 86	3,144
Campbell	84%	$ 47	2,420
Carbon	100%		
Converse	100%		
Crook	63%	$ 90	1,184
Fremont	79%	$ 84	3,529
Goshen	100%		
Hot Sprin	98%	$ 490	56
Johnson	77%	$ 568	888
Laramie	100%	$ 481	40
Lincoln	58%	$ 55	3,609
Natrona	90%	$ 83	3,231
Niobrara	63%	$ 528	491
Park	93%	$ 500	923
Platte	100%		
Sheridan	92%	$ 115	1,172
Sublette	62%	$ 391	1,522
Sweetwat	93%	$ 171	1,096
Teton	82%	$ 174	2,319
Uinta	97%	$ 238	272
Washakie	100%		
Weston	93%	$ 294	221
Total			28,778
Average	85%	$ 251	

- The choice of geographic area to determine the cost of bridging the broadband gap is critical to a fair and accurate outcome in the sparsely populated wide open spaces of Wyoming.

  The FCC method is to analyze data at the granular census block level but to implement policy and funding by averaging census block data up to the county level. Wyoming has very large counties. Increasing the focus by averaging to the census tract level is also unworkable in some circumstances because in one case, a census tract is the same size as a county Wyoming (eg. Sublette, Niobrara). We recommend that, for states with an average county size greater than 4,000 square miles, the FCC not average census block level data to the county level; rather the FCC should provide policy and funding with

greater care to recognize the important localized nuances of providing broadband in vast, sparsely populated open spaces.

- Compounded by the choice of geographic area to determine the cost of broadband and the inherent problems related to Wyoming's unique geography and demographics, the FCC's method of determining funding to support wireline or wireless infrastructure is not appropriate.

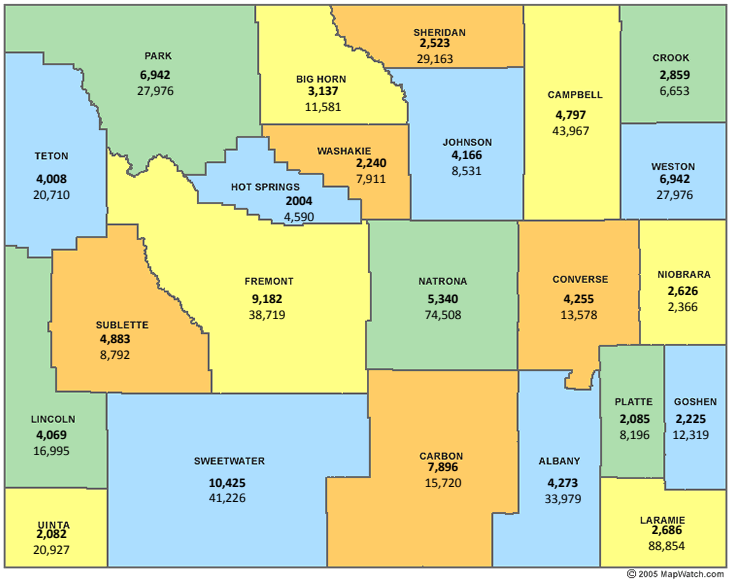
- Finally, with regard to the basic model assumption concerning minimum efficient scale and the FCC's definition of the "Investment Gap", the FCC approach is destined to leave out many unserved and underserved citizens in Wyoming.

- If the FCC decides to cap legacy support, the transition from current high-cost programs may be harmed unless the cap is implemented in an incremental and very careful manner.

GENERAL COMMENTS

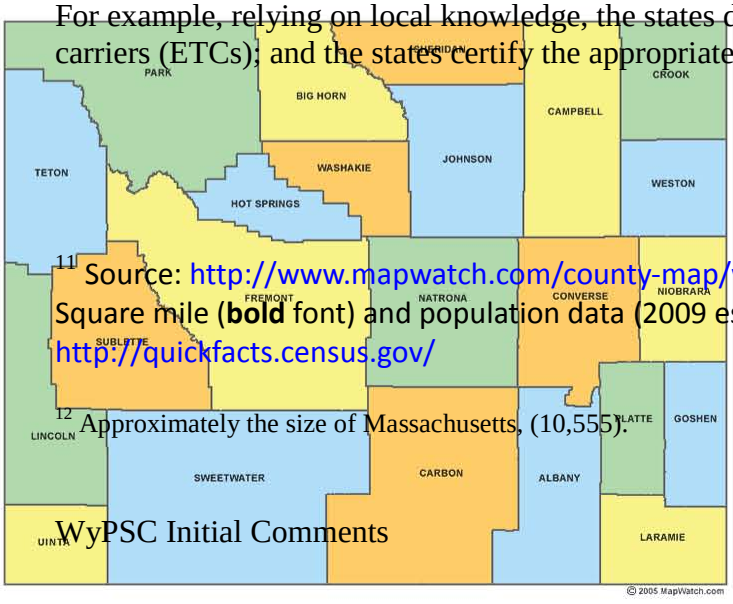
In our comments we refer to specific counties in Wyoming and discussing several maps presenting county level information. To aid the reader in understanding our references to specific counties in Wyoming we provide the following map.[11] Notice that some Wyoming counties are extremely large. For example Sweetwater County covers10,425 square miles[12] with a population of 41,226. By contrast, the average county size in the United States is 2,159 square miles.

Wyoming Counties, Square Miles (**bold**), and 2009 Estimated Populations



1. The Role of the States.

The Connect America Fund proposal is disturbingly silent regarding the role of the states in implementing broadband universal service. The existing federal universal service program's success is due, in part, to involving the states in a close federal/state partnership with the FCC. For example, relying on local knowledge, the states designate eligible telecommunications carriers (ETCs); and the states certify the appropriate use of the federal funds.



[11] Source: http://www.mapwatch.com/county-map/wyoming.shtml visited June 30, 2009. Square mile (**bold** font) and population data (2009 estimate) is provided from http://quickfacts.census.gov/

[12] Approximately the size of Massachusetts, (10,555).

Integrity of the fund.

The states have demonstrated that they play an important role in the federal universal service scheme by designating ETCs and by certifying the appropriate use of the federal funds. Relying on local knowledge and the existing regulatory framework at the state level, states are best suited for the job of making sure that future funding is used only for the provision, maintenance and upgrade of facilities used to provide supported services.

Obligation to serve.

The FCC's determination of its jurisdictional authority over broadband is still pending.[13] Until that matter is resolved, it is difficult to offer any pertinent comments without an understanding of the FCC's jurisdiction as it relates to obligation to serve.

The NOI and NPRM ignore that states are stakeholders with an interest in both voice and broadband universal service.

Our interest in universal service is not ruled by the technology in use; and consumer issues under the proposed CAF will be the same as they are currently under the federal basic universal service regime. For example, in 2009, the WyPSC received about 154 complaints from Wyoming telecommunications service consumers but also received 105 information requests. Of the 105 information requests, many concerned the need for additional and higher speed service [14] Consider one customer's claim:

i. Provider charges more than just and reasonable rate
ii. Provider will not extend lines within its service area
iii. Provider does not provide prompt hookups
iv. Provider has poor service quality
v. Provider has frequent outages
vi. Provider discloses private customer information
vii. Provider blocks some calls

Nothing changes if we also know that the voice service uses IP protocol and the provider also sells ISP service.[15]

[13] "FCC TO SEEK BEST LEGAL FRAMEWORK FOR BROADBAND INTERNET ACCESS, Agency Sees Problems from Comcast Case; Begins Public Proceeding to Examine Options for Moving Forward" News Release June 17, 2010. And, Notice of Inquiry In the Matter of Framework for Broadband Internet Service, GN Docket No. 10-127, Released: June 17, 2010, Comment Date: July 15, 2010, Reply Comment Date: August 12, 2010.

[14] 2010 Annual Telecommunications Report to the Wyoming Legislature for Calendar Year 2009, by the Wyoming Public Service Commission, page 18.
http://psc.state.wy.us/htdocs/telco/telco10/2010%20Annual%20Telecom%20Report.pdf

[15] Presentation to NECPUC by Peter Bluhm of Rolka, Loube, Saltzer, Associates, "Is Telecom Regulation Still Needed?" May 17, 2010.

2. CenturyLink/Qwest Transaction - Ongoing Funding is Unclear.

The proposed acquisition of Qwest by CenturyLink now pending at the FCC causes us concern because of the possible effect on federal universal service funding in Wyoming of the FCC's proposal to cap legacy support. Under the FCC's rules, CenturyLink is considered a *rural telephone company* in Wyoming; and, accordingly, federal high-cost universal service support for CenturyLink in Wyoming is determined based on CenturyLink's embedded investments and expenses. On the other hand, Qwest is considered to be a *non-rural carrier* under the FCC's rules, and its federal high-cost universal service support in Wyoming is determined based on the FCC hypothetical total element long run incremental cost model that is used to estimate forward-looking efficient costs. "Only one-third of housing units are in census blocks where a rate-of-return carrier is the dominant provider."[16]

Given the FCC's proposal to cap legacy support, we refer to the following hypothetical analysis.[17]

	Actual Monthly Support Per Loop $		**Monthly Support Per Loop After Hypothetical Freeze $**
Chugwater Tel. Co. (Platte County)	160.90		72.23
Tri-County Telephone Association, Inc.	102.02		62.20
Dubois Tel. Exch. Inc.	79.15		48.93
SILVER STAR TEL-WY	74.16		50.65
Range Telephone. Cooperative. Inc. - WY	36.25		30.34
CenturyTel of Wyoming, Inc.	14.21		15.84
SPRINT / UTC OF THE WEST-WY	15.46		23.98
Union Tel. Co.	48.93		59.24
ALL WEST COMM.-WY	31.14		50.75
Average	62.47		46.02

Considering Platte County, as an example, the outcome under the FCC's proposal will be very undesirable. Platte County is served by Qwest and Chugwater Telephone Company as the providers of last resort. The FCC proposes capping Chugwater's support and GVNW's hypothetical analysis shows that if the FCC had proposed a cap on legacy support for Wyoming's *rural telephone companies* in 2003 at 2003 support per loop levels, our citizens in high-cost areas (customers of Chugwater Tel. Co. for example) would have been deprived of almost $100 per loop per month in support.

[16] OBI 1, p. 21.

[17] Derived from comments in the instant proceeding of GVNW Consulting, Inc., June 3, 2010, and USAC disbursement data.

The FCC appears to believe (based upon bad assumptions) that Platte County is already 100% served with national standard broadband,[18] and so the FCC seems poised to provide absolutely no broadband universal service support to Platte County and therefore to Chugwater Telephone Company. It appears that the combination of the FCC proposal to cap funds and to provide zero broadband support will create an unsustainable telecommunications environment for Chugwater Telephone Company and its customers.

This is just one example among others of the potentially extremely detrimental effect of the FCC's Broadband Action Agenda on Wyoming citizens and service providers. Another critical example is that of United Telephone Company of the West, d/b/a CenturyLink in Wyoming. In May of 2010, United received zero high cost loop support.[19] United serves in Goshen and Platte Counties, and both counties are assumed by the FCC to be already 100% served with national standard broadband and so both counties would receive zero ongoing broadband support. The FCC is seriously mistaken if it thinks such a plan will provide adequate universal service support in two of the least densely populated counties in the country.

SPECIFIC COMMENTS RESPONDING TO THE NOI.

3. Model issues.

For the purpose of broadband assessment modeling for service areas in Wyoming the FCC should tailor its assumptions concerning the geographic area it should use in calculating the cost of deploying a network and providing services to better fit Wyoming's uniquely vast open spaces.

At ¶42 of the NOI, the FCC seeks comment on [i] what geographic area the FCC should use in calculating the cost of deploying a network and providing services, and [ii] whether the FCC should use neutral geographic units, as recommended in the National Broadband Plan. The choice of geographic area used to determine the cost of bridging the broadband availability gap is critical in sparsely populated areas of Wyoming. We agree that "One of the key principles underlying the model's design is: Capturing the local dis-economies of scale that drive local profitability requires granular calculations of costs and revenues."[20] However, we hope our comments that follow offer the FCC something to consider in improving its analysis.

We are troubled that the Broadband Assessment Model (BAM) and OBI Technical Paper No. 1[21] contain numerous operating assumptions that do not fairly address the sparsely populated, vast spaces, and distances involved in the provision of service in Wyoming.

AGGREGATION AT THE COUNTY LEVEL

Wyoming has very large counties.

[18] Additional detail and analysis of the FCC's broadband availability estimates in Wyoming counties follows.

[19] USAC disbursement data search, visited July 12, 2010.

[20] OBI, The Broadband Availability Gap at 33.

[21] The Broadband Availability Gap, Federal Communications Commission, April 2010.

At ¶41 FCC staff concluded that it does not make sense to evaluate whether to build a network at the census block level. We agree with this conclusion, but it does *not* follow that averaging census block data to the county level is appropriate in very large counties with low population densities. We believe the FCC understands this.

> There is no perfect solution to this problem. If the geography is too big there will be portions that would be more efficiently served by an alternate technology, but if the geography is too small it will be subscale, thereby driving up costs. Although the model is capable of evaluating at any aggregation of census blocks, in order to avoid a patchwork of technologies that are all subscale, we have evaluated the cost of technologies at the county level. Counties appear large enough in most cases to provide the scale benefits but not so large as to inhibit the deployment of the most cost-effective technology.[22]

In addressing the issue of minimum efficient scale, the FCC has adopted a reasonable approach using the concept it has named the Investment Gap. However, due to the large size of Wyoming counties, perhaps the biggest problem is that the FCC assumes "counties can have no gap if they are currently fully served (i.e., have no unserved), or if the total NPV in the county is positive."[23] We believe that this must be a core reason the FCC thinks Carbon County, Wyoming, is 100% served. We do not believe Carbon County, Wyoming, is 100% served and we are working through the state broadband mapping initiative to explore ways of showing the appropriate data to the FCC. However, as mentioned earlier, the timing of the availability of better data and maps is such that we will not be able to provide comprehensive new information about this problem until it becomes available later this year.

The FCC states, "Although density is not the only driver of gap, it is a significant one."[24] This is a truism, and the FCC should not be cavalier in assigning unserved and underserved Americans to a status in which they will be ignored in future national broadband policy.

The FCC has a long history of misunderstanding just how rural Wyoming really is and the challenges associated with the provision of information communications technology in the large and sparsely populated open spaces of the West. For example, the FCC notes that "The average population density of populated census blocks in the United States is 153.6 people per square mile, though approximately three quarters of the population lives in areas of lower density. Unserved census blocks have a much lower density, with an average of only 13.8 people per square mile."[25] But Wyoming is much more rural than the FCC seems to want to recognize. Consequently, Wyoming telecommunications markets are characterized by persistently high cost service. We have successfully taken this issue to the FCC recently in pressing our arguments that the high cost model and the FCC's regime for supporting Qwest in Wyoming did not provide adequate funds.[26]

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[22] OBI 1, p. 37.

[23] OBI 1, p. 5.

[24] OBI 1, p. 5.

[25] OBI 1, p. 19.

[26] "We find that the Wyoming Petitioners have demonstrated that supplemental high-cost support is warranted in the rural areas served by Qwest to achieve reasonably comparable rates." ¶84. See, MEMORANDUM OPINION AND

As we have explained before in numerous filings spanning the past decade, Wyoming is the second least populated state. It had only 522,830 people in 2007, less than 5.4 persons per square mile. Almost 45% of the population lives in the ten largest cities, only two of which exceed 50,000 people. Visitors otherwise commonly find small communities where railroads and highways intersect. About half of Wyoming is federal land, and most of that land is largely vacant – national forests, national parks, wilderness, and grasslands. Many Wyomingites live an extended distance from the nearest town.

Fewer homes in large areas produce low local line density, which is a controlling factor in the economics of providing universal service in Wyoming. For example, Qwest's wire center in Lusk, Wyoming, has a serving area nearly three times larger than the entire state of Rhode Island. However, the Lusk wire center has a local loop density of less than one access line per square mile. By contrast, within the Washington, D.C., city limits there are approximately 10,000 access lines per square mile. Factoring in rugged terrain and extreme weather conditions, this means that the cost of service is high, and it is expensive to provide universal service to many areas of Wyoming.[27]

We have previously recommended the use of route miles per subscriber as a reasonable proxy for density.[28] The FCC seems to agree that route miles are a lot like road miles and so we agree that road miles per household or housing unit are a good statistic to factor into the assessment of the broadband gap.

> Since fixed broadband connects homes, not people, and most broadband networks are built along roads, either buried or on telephone/electric poles, an even more important driver of the cost to serve rural areas than population density is the number of road miles per housing unit of an area.[29]

Turning directly to the issue of county level analysis, we now reference the following map.[30] This beta map illustrates the broadband gap if the national broadband target is four Mbps.

ORDER: WYOMING PETITION FOR SUPPLEMENTAL HIGH-COST UNIVERSAL SERVICE SUPPORT, In the Matter of High-Cost Universal Service Support, Federal-State Joint Board on Universal Service, Joint Petition of the Wyoming Public Service Commission and the Wyoming Office of Consumer Advocate for Supplemental Federal Universal Service Funds for Customers of Wyoming's Non-Rural Incumbent Local Exchange Carrier, WC Docket No. 05-337 and CC Docket No. 96-45, Released: April 16, 2010, ¶45.

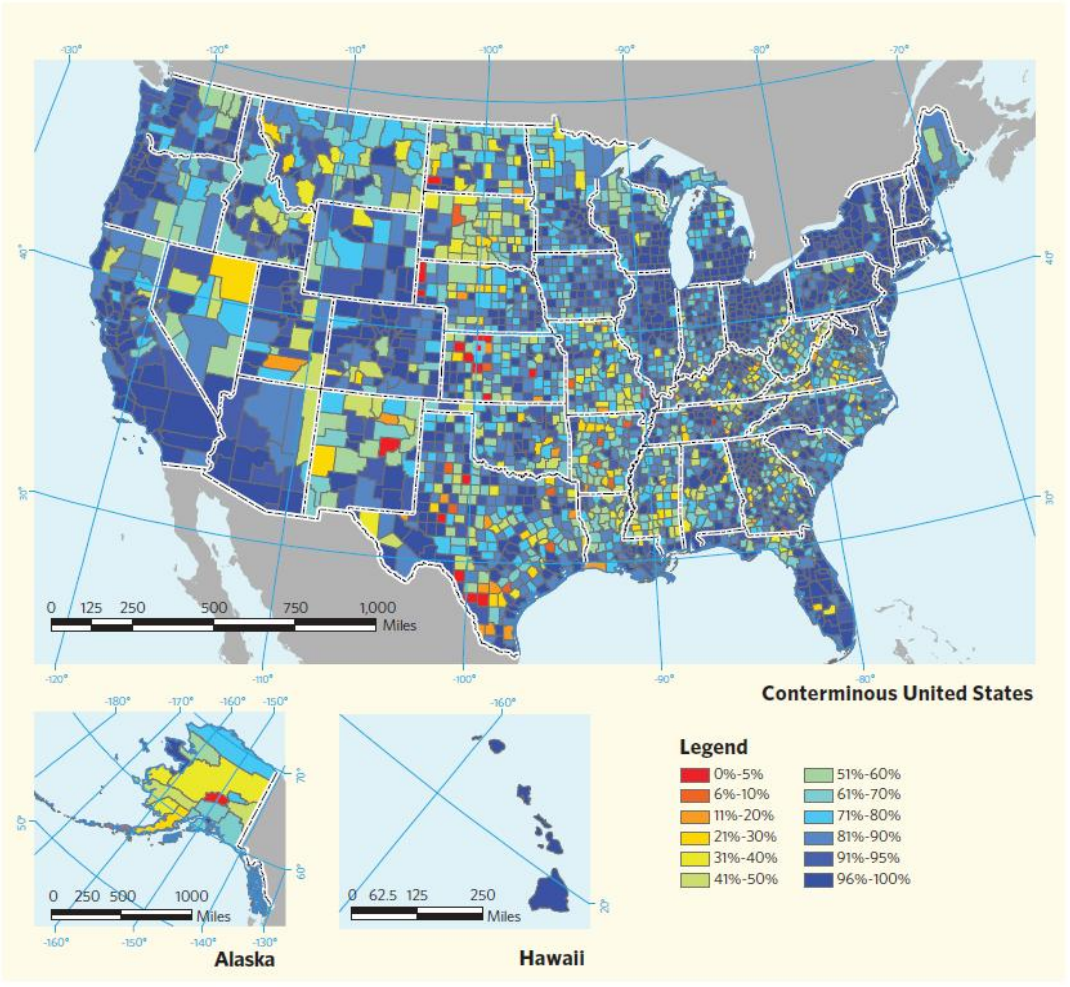
[27] In the Matter of High-Cost Universal Service Support Federal-State Joint Board on Universal Service Support, WC Docket No. 05-337CC Docket No. 96-45, Notice of Inquiry Regarding Issues Raised by the February 23, 2005, United States Court of Appeals for the Tenth Circuit in the Qwest II Decision, Comments of the Wyoming Public Service Commission, May 8, 2009. P. 5.

[28] Id. P. 17.

[29] OBI 1, p. 20

[30] OBI 1, p. 18.

Exhibit 2-B:
Availability of Broadband Networks Capable of Meeting the National Broadband Target

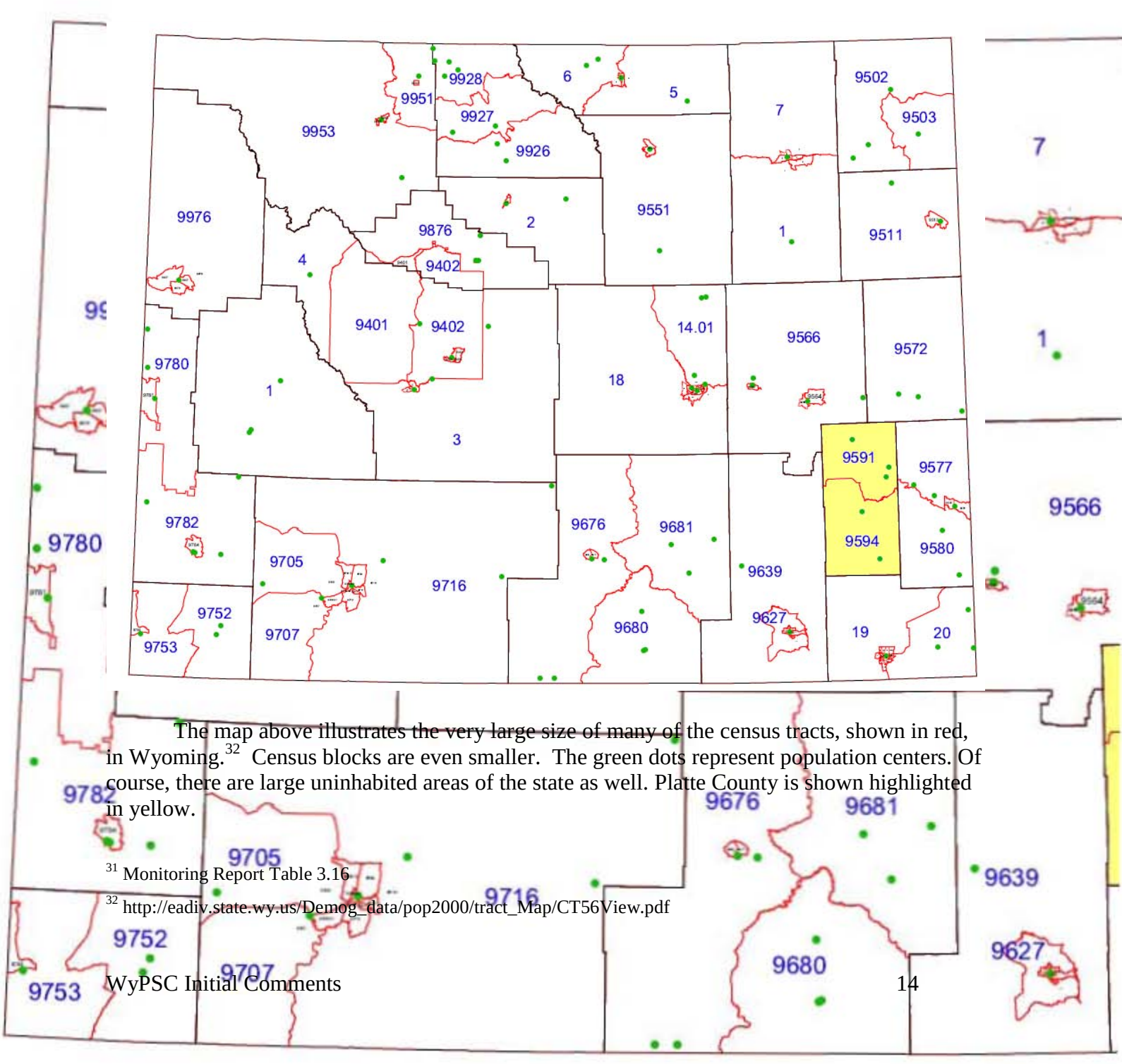


The FCC Broadband Assessment Model (BAM) does not factor in satellite services. BAM generates the data necessary to create this map by "rolling up" census blocks to the county level. A census block is the smallest available unit of analysis and would be perhaps the size of a city block in urban areas. In rural areas, a census block can be much larger, blurring the focus on rural areas in Wyoming. Analysis at the county level further reduces focus on the critical details that are visible at a more granular level and can possibly have a significant negative impact on the quality of the analysis. This averaging effect does not accurately assess the broadband gap that actually exists in Wyoming.

The map above indicates no broadband gap in areas such as Carbon County. This is very troubling because it is certain that there is a lack of broadband in rural areas of that county. Several other areas of the state do not appear to be analyzed accurately either. The average square miles per county in Wyoming is 4,221. In contrast, Kansas counties are much smaller, averaging 773 square miles. Notice how Kansas shows a lot more gaps, indicated by counties colored red or yellow. However, BAM estimates Kansas only requires $655,816,807 to bridge its broadband gaps, while Wyoming is estimated to require $709,743,210. This actually seems somewhat logical, since it may be cheaper to provide voice service in Kansas due to differences

in population density and other cost factors such as terrain. Kansas currently receives $9.71 per loop per month for federal high-cost voice grade support, and Wyoming receives $13.22[31] (before the additional funds Qwest will begin to receive in November as a result of the FCC's April 15, 2010, response to Wyoming's 2004 Petition for Supplemental Funding).

If the FCC adjusts BAM to roll up census blocks to census tracts instead of counties it may improve the analysis. However, this postulate remains to be verified if the FCC revises its approach. It also remains to be seen if rolling census blocks up to census tracts will be much more accurate or reliable, since so many census tracts in Wyoming are also large, as illustrated below.



The map above illustrates the very large size of many of the census tracts, shown in red, in Wyoming.[32] Census blocks are even smaller. The green dots represent population centers. Of course, there are large uninhabited areas of the state as well. Platte County is shown highlighted in yellow.

[31] Monitoring Report Table 3.16

[32] http://eadiv.state.wy.us/Demog_data/pop2000/tract_Map/CT56View.pdf

According to the Wyoming Department of Administration and Information, Economic Analysis Division, a typical census tract in Wyoming is usually about 3,000 to 4,000 people. So Laramie County, historically our second most populous county, has about 14 or 15 census tracts, but Niobrara County, with 2,626 square miles and only 2,366 people, is just one census tract. Obviously, if the FCC chooses to roll up census blocks to census tracts, rather than to counties, this will not improve the focus on Niobrara County at all because it is one census tract.

Looking at Fremont County, notice that Census Tract 9402 also reaches into Hot Springs County, raising the question of how the model rolls up census tracts to county levels when the census tract straddles county lines.

At ¶42, the FCC seeks comment on what geographic area it should use in calculating the cost of deploying a network and providing services, and whether the FCC should use neutral geographic units, as recommended in the National Broadband Plan. Footnote 94, embedded in ¶42 directs the reader to see the National Broadband Plan at page 145, which states: "The FCC should evaluate eligibility and define support levels on the basis of neutral geographic units such as U.S. Census-based geographic areas, not the geographic units associated with any particular industry segment."

We agree with the concept of neutral geographic units, however, in Wyoming's large spaces, the FCC should heed its own reference to the NTIA's national broadband mapping initiative which actually does recognize the importance of using more granular data to study less populated large areas. In an August 2009 clarification of the information requirements for State Broadband Data and Development Grant Program awardees, the NTIA clarified the exact level of detail required:

> For those census blocks larger in area than two square miles, Awardees must provide NTIA, for each facilities-based provider of broadband service in their state, either the address-specific data as described in the original Notice or a list of all street segments with address ranges in such census blocks, as contained within the U.S. Census Bureau's TIGER Line Files or such other database of at least equivalent granularity, in which broadband service is available to end users, along with the associated service characteristics identified in the Technical Appendix.[33]

The FCC specifically recognizes the importance of scale and should not forget it. "Capturing the local (dis-)economies of scale that drive local profitability requires granular calculations of costs and revenues."[34] The FCC goes on to say,

> we take a bottom-up approach that provides sufficient geographic and cost-component granularity to accurately capture the true costs of subscale markets. **. . .** In order to calculate the costs with this level of accuracy, we need geographic and cost component granularity throughout. Accounting for granularity with respect to geography is particularly important because so many

[33] Federal Register: August 12, 2009, Department of Commerce, National Telecommunications and Information Administration, State Broadband Dada and Development Program, Notice of Funds Availability, Page 405701.

[34] OBI 1, p. 35

> network costs are distance dependent. Calculations are needed at a fine geographic level; therefore, we model the census block as the basic geographic unit of calculation.[35]

Yet, the FCC chooses to aggregate the analysis to the county level when it actually included Chapter 3 Endnote 3, which says: "Note that for census blocks with the largest area (likely the lowest-density census blocks); even census blocks may be too aggregated. See, for example, "State Broadband Data and Development Grant Program; Notice of Funds Availability, Clarification," 74 Federal Register 154 (12 Aug. 2009), pp. 40569 -40570."

INVESTMENT GAP

Platte County serves as a good example to illustrate the second major area of concern. The FCC defines the broadband gap in terms of an "Investment Gap." It is our understanding this term means that, if a county has more profitable customers and can generate those profits needed to completely subsidize the less profitable customers, then the FCC will assume that the county is 100% served. This is a heroic assumption that cannot pass the test of reasonableness in many Wyoming counties because they do not have sufficient population to enable the averaging effect to yield a proper outcome in very large counties with small, sparse population densities outside of urban areas.

The FCC says, "the best measure of profitability is the net present value (NPV) of a build. This gap to profitability in unserved areas is called the Broadband Availability Gap in the NBP; throughout this paper, we will refer to this financial measure as the Investment Gap."[36] In spite of this approach, the FCC also says, "The focus of this analysis is on areas where not even one network can operate profitably.[37] We agree but the totality of the FCC's effort in this regard falls short.

Considering Platte County, it is not reasonable to expect that the 5,074 people living in Platte County's only population centers will be able to provide the capital necessary to make a business case for investment necessary to bring broadband to the other 3,456 persons living outside of town. (We would also note that the Platte County example casts doubt on the FCC assumption for fixed wireless that each tower will serve 650 people.[38])

Putting things into another perspective, BAM estimates the total cost to fill the 4 Mbps gap in Wyoming is $709,743,210. That is about 2.96% of the $24 billion that the FCC currently estimates it will take to bridge a 4 Mbps gap nationally. The current high cost fund distributes $4,457,152,083 per year, and Wyoming receives 1.27% of that, or $56,389,558 per year. By comparison, Kansas (chosen as an example because it has considerable rural area but also has a large number of small counties) receives about 5.65% of the current high cost fund and BAM

[35] Id. p. 36.

[36] Id. page 2.

[37] Id. p. 3.

[38] OBI 1, p. 76.

indicates Kansas would require 2.73% of the $24 billion the FCC estimates it will take to bridge the national gap.

CHOICE OF TECHNOLOGY

We are concerned that the FCC's assumptions concerning the deployment of wireline versus wireless technology is not properly applied.

> Support any technology that meets the network requirements. Broadband technologies are evolving rapidly, and where service providers are able to operate networks profitably, the market determines which technologies "win." Given that, there appears to be little-to- no benefit to pick technology winners and losers in areas that currently lack broadband. Therefore, the base case includes any technology capable of providing service that meets the National Broadband Availability Target to a significant fraction of the unserved.[39]

Our concern is illustrated by studying the FCC's map shown below.[40]

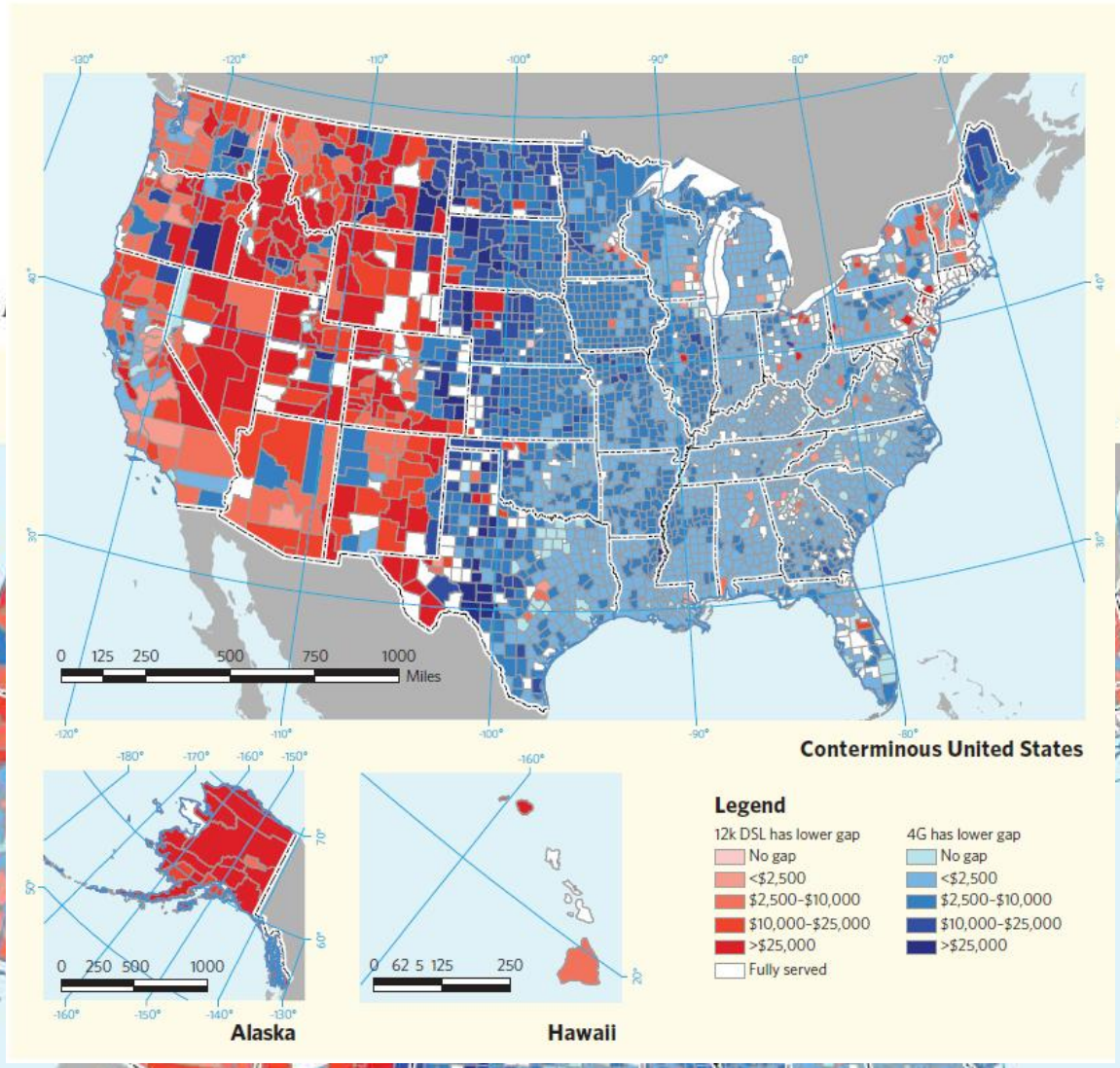
> In Exhibit 1-I, areas in blue are more economic to serve with wireless, and areas in red are cheaper to serve with DSL. For each, darker colors indicate counties with a higher gap per unserved housing unit. This technology comparison is made at the county level, not at a more granular level . . .[41]

[39] Id.

[40] Id. p. 12.

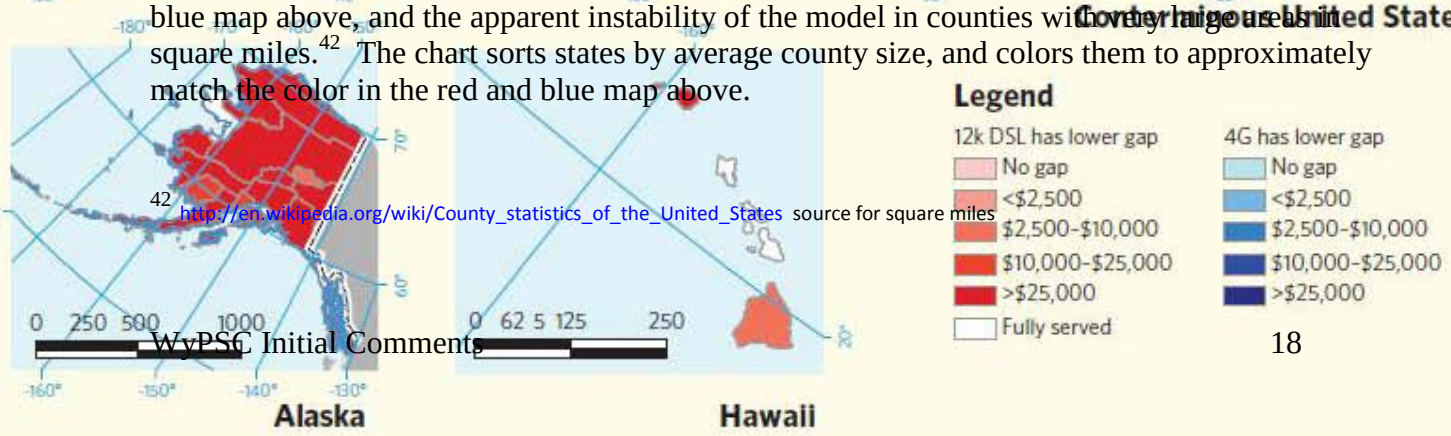
[41] Id. p. 10.

Exhibit 1-I:
Investment Gap per Housing Unit by Lowest-Cost Technology for Each County



The map above purports to show that it is generally less expensive to close the broadband gap with wireless 4G technology east of Wyoming, and to use DSL with 12,000 foot copper loops west of Nebraska. This map would likely change significantly if the target for speed standards were higher or the granularity of analysis changed.

The chart below is a visual illustration of the apparently strong correlation between the FCC Broadband Assessment Model's bias for wireless east of Wyoming as shown in the red and blue map above, and the apparent instability of the model in counties with very large areas in square miles.[42] The chart sorts states by average county size, and colors them to approximately match the color in the red and blue map above.



42 http://en.wikipedia.org/wiki/County_statistics_of_the_United_States source for square miles

Rank	State	Mean County Area (sq.mi.)
1	Alaska	39016
2	Arizona	7600
3	Nevada	6504
4	Wyoming	4253
5	New Mexico	3685
6	Utah	2928
7	California	2822
8	Oregon	2733
9	Hawaii	2733
10	Montana	2626
11	Maine	2212
	Average	2159
12	Idaho	1899
13	Washington	1828
14	Colorado	1626
15	North Dakota	1334
16	Michigan	1178
17	South Dakota	1168
18	Texas	1057
19	Minnesota	999
20	Florida	981
21	New Hampshire	935
22	Wisconsin	910
23	Oklahoma	908
24	New York	880
25	Nebraska	832
26	Delaware	830
27	Louisiana	810
28	Kansas	784
29	Alabama	782
30	Massachusetts	754
31	Arkansas	709
32	South Carolina	696
33	Connecticut	693
34	Pennsylvania	687
35	Vermont	687
36	Missouri	606
37	Mississippi	591
38	Iowa	568
39	Illinois	568
40	North Carolina	538
41	Maryland	517
42	Ohio	509
43	Tennessee	444
44	West Virginia	441
45	New Jersey	415
46	Indiana	396
47	Georgia	374
48	Kentucky	337
49	Virginia	319
50	Rhode Island	243

The FCC wireless model limits the number of additional towers it will build to four in a given "stretch" to reach the unserved.[43] The FCC indicates that engineering economics dictate that after four hops, it would be cheaper to string fiber and employ a DSL solution. This decision/constraint is therefore imposed on the entire problem of bridging the broadband gaps across the country. Noting that DSL is the proposed solution for Alaska, slide 8 illustrates how preposterous the results can be. It is difficult to imagine why the FCC thinks that DSL is the efficient solution in Alaska or in Hawaii for that matter. The only explanation is the arbitrary decision to constrain a wireless build-out to a maximum of four towers.

Another troubling assumption that may have biased the FCC's choice of technology away from fixed wireless in the open spaces of large Wyoming counties may be that: "For this analysis we assume the following: for wireless, a network of cell sites with 2x20MHz of spectrum, each with 650 subscribers"[44] We are concerned that this type of assumption constitutes an inappropriate bias against the use of wireless technology in Wyoming. There are few cell sites in Wyoming that are serving 650 subscribers because our population density is very low in many unserved and underserved rural areas. Yet, the market experience seems to demonstrate that a more entrepreneurial spirit has been able to make a business case for wireless investment in Wyoming and we urge the FCC to study the matter with greater care.

There appears to be as good of a market for wireless broadband in Wyoming as in many other states, as implied in the chart below. Therefore, the outcome of the FCC's analysis of the proper technology choice seems not to fit well with the actual market-driven experience in Wyoming. The chart shows that Wyoming's "take rate" for fixed wireless is approximately the 11th highest in the nation on a percentage basis.[45]

[43] OBI 1, p. 76.

[44] Id. p. 60.

[45] Source: FCC, "High-Speed Services for Internet Access: Status as of December 31, 2008," Industry Analysis and Technology Division, Wireline Competition Bureau, February 2010, Table 14. High-Speed Connections by Technology by State.

High-Speed Connections by Techology by State, 12/31/08
(Connections over 200 kbps in at least one direction, in thousands)

		ADSL	SDSL	Other Wireline	Cable Modem	Fiber	Total Wireline	Fixed Wireless	Fixed Wireless as a % of Total Wireline
1	Utah	299	4	6	*	5	314	30	9.55%
2	Idaho	160	1	*	121	1	283	21	7.42%
3	Montana	108	3	1	92	1	205	13	6.34%
4	Alaska	75	4	#	*	#	79	4	5.06%
5	New Mexico	231	#	*	146	1	378	15	3.97%
6	South Dakota	54	3	#	122	9	188	7	3.72%
7	Nebraska	151	1	*	278	2	432	16	3.70%
8	Iowa	336	3	*	330	9	678	25	3.69%
9	North Dakota	62	1	*	85	10	158	5	3.16%
10	Nevada	222	1	8	*	1	232	7	3.02%
11	**Wyoming**	**57**	**2**	*****	**64**	**#**	**123**	**3**	**2.44%**
12	Kansas	243	1	*	425	13	682	16	2.35%
13	Colorado	624	2	*	659	3	1,288	28	2.17%
14	Indiana	672	4	9	626	55	1,366	24	1.76%
15	Minnesota	544	30	*	666	14	1,254	20	1.59%
16	Arizona	466	2	*	987	2	1,457	20	1.37%
17	Illinois	1,503	9	*	1,591	5	3,108	37	1.19%
18	Wisconsin	556	16	5	810	5	1,392	15	1.08%
19	Oklahoma	337	1	*	408	4	750	8	1.07%
20	Missouri	727	1	13	553	4	1,298	12	0.92%
21	Michigan	779	8	16	1,411	4	2,218	17	0.77%
22	Texas	2,607	9	*	2,081	258	4,955	37	0.75%
23	Oregon	371	11	*	516	54	952	7	0.74%
24	Washington	599	7	16	980	37	1,639	11	0.67%
25	Ohio	1,069	9	15	1,943	6	3,042	20	0.66%
26	Virginia	553	3	30	1,096	252	1,934	9	0.47%
27	Kentucky	421	7	*	452	4	884	3	0.34%
28	West Virginia	152	*	3	205	#	360	1	0.28%
29	California	4,617	22	*	3,994	315	8,948	23	0.26%
30	Louisiana	385	1	*	518	19	923	2	0.22%
31	Arkansas	273	#	*	248	1	522	1	0.19%
32	Tennessee	542	1	*	717	28	1,288	2	0.16%
33	Alabama	457	4	9	460	3	933	1	0.11%
34	Florida	2,005	5	*	2,825	247	5,082	5	0.10%
35	Massachusetts	*	3	17	1,307	*	1,327	1	0.08%
36	New York	1,122	17	38	4,139	*	5,316	3	0.06%
37	North Carolina	891	1	*	1,551	5	2,448	1	0.04%
38	Pennsylvania	1,232	12	23	1,807	*	3,074	1	0.03%
39	Delaware	*	#	4	*	*	4	-	0.00%
40	American Samoa	*	*	-	-	-	-	*	
41	Connecticut	*	2	5	615	2	624	*	
42	Dist. of Columbia	*	2	4	*	1	7	*	
43	Georgia	1,242	2	*	973	16	2,233	#	
44	Guam	*	*	*	*	-	-	-	
45	Hawaii	*	*	1	*	1	2	*	
46	Maine	114	4	1	288	1	408	*	
47	Maryland	471	7	24	799	*	1,301	#	
48	Mississippi	229	#	*	216	1	446	#	
49	New Hampshire	91	2	3	298	*	394	#	
50	New Jersey	666	4	56	1,637	*	2,363	*	
51	Northern Mariana Is.	*	-	*	*	*	-	*	
52	Puerto Rico	*	*	3	*	#	3	*	
53	Rhode Island	*	1	2	*	*	3	*	
54	South Carolina	400	#	10	752	14	1,176	*	
55	Vermont	61	*	1	71	*	133	*	
56	Virgin Islands	*	*	*	-	-	-	*	
	National	28,776	233	323	39,862	1,413	70,607	471	0.67%

Here are a few more examples of our concerns over some of the FCC modeler's assumptions and our discussion.

- "Telecom networks are designed to provide service over significant distances, often larger than 5 miles."[46] We agree, but in Wyoming we have some customers who are served by telephone poles and wires that stretch over distances as great as or greater than 60 miles from the central office. So, while it makes sense in most instances to assume a business case for an area larger than a census block, we are concerned that averaging from census blocks to the county level when we have very large counties may fail to accurately address broadband universal service needs in our unserved and underserved rural areas.

- "The model assumes an 11.25% discount rate; by calculating the NPV gap as the point where NPV = 0, we equivalently set the internal rate of return (IRR) of these incremental broadband build outs to 11.25%. This rate is the same one determined by the FCC in 1990 to be an appropriate rate for telecom carriers earning a rate of return on interstate operations"[47]

We would like to point out that 11.25% seems to be an unnecessarily high rate of return for broadband investment in rural areas. The WyPSC has determined a fair rate of return for rural telecommunications operations more recently than the FCC's 1990 effort. The WyPSC authorized a fair rate of return of 9.93% in 2008 for a very small rural telephone company.[48]

4. Transition from the current high-cost programs.

The current FUSF already supports POTS lines that are supposed to be readily scaled up to provide broadband since the FCC's high cost model assumes that supported copper loop lengths are no more than 18,000' long, enabling the provision of DSL. Because of this, it will be important for the FCC to provide universal service support not only to close broadband gaps, but also to continue support for maintaining existing lines that are available to provide broadband in a scalable fashion. This will be especially important for Wyoming's rural independent telecommunications companies. Please refer to our analysis above of GVNW's filing concerning losses and gains under a hypothetical cap and our concerns stated above concerning the future of necessary and sufficient support when CenturyLink owns Qwest.

[46] Id. at 36.

[47] OBI 1, p. 33.

[48] "Consistent with the approved revenue requirement, the Commission's findings and the Stipulation, the Commission concludes a capital structure comprised of 40% debt and 60% equity, an authorized rate of return of 9.93% for Chugwater's operations are just and reasonable and in the public interest." ¶ 31. Memorandum Opinion, Findings and Order Approving Stipulation Agreement, Before the Wyoming Public Service Commission, In the Matter of the Application of Chugwater Telephone Company for Authority to Increase Business and Residential Telecommunications Rates by $128,000 Per Annum and to also Change the Rate for Intrastate Switched Access Charges, Docket No. 70005-24-TR-08, October 27, 2008.

CONCLUSION

In conclusion, the FCC proposes models and assumptions to identify gaps in the nation's broadband network and to quantify the amount of support needed to close those gaps at minimal expense. We believe that the FCC's model and assumptions cannot reliably identify broadband gaps and target support for rural areas in Wyoming. For rural areas characterized by sparse population, small population centers, and very large areas we recommend a more specific and relevant analysis involving local knowledge and closer partnership with states.

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Respectfully submitted July 12, 2010.

ALAN B. MINIER, Chairman

STEVE OXLEY, Deputy Chairman

KATHLEEN A. LEWIS, Commissioner